

## **The Complexity of Finance in a Globalized World** **By Gianfranco Leonetti and Umberto Triulzi**

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#### **1. Introduction**

The global economy is facing since 2007-2008, the strongest and most complex crisis since the Great Depression. There are many signs indicating the seriousness of such crisis: high global debt levels, weak productivity growth, financial instability, persistently low interest rates and unequal development. The term “complexity” is commonly used to describe the problems that we are currently experiencing at a social, cultural, environmental, political and human level. Many scientists (sociologists, physicists, engineers and others, including the non-idealized economists) criticize our discipline for not having developed an approach, which allows for complex issues and processes to be incorporated into the mainstream economic market model (Buchanan 2008, Kirman 2011).

In the wake of the recent crisis, the hypotheses of perfect information, agents rationality, efficient prices and a natural tendency towards partial or general equilibrium models, which the economic market model is based on, were shown to underestimate the scale and variety of interactions induced by a financial turmoil and the complexity of the global economy, which revealed itself to be characterized by uncertainty, heterogeneity, non-linear phenomena, technology innovations, integrated networked relations and which is clearly operating under conditions of non equilibrium and moving between juxtaposing balance effects.

A growing literature and a large amount of research work have addressed the issue of complexity, starting from different scientific backgrounds and methodological approaches. There is no one single theory of complexity but rather, a multitude of disciplines exists, which investigate, interpret and simulate the main variables that influence complex systems (Urry 2005; Castellani-Hafferty 2009; Hidalgo-Hausmann 2009, Arinaminpathy, Kapadia, May 2012, Freedman 2014).

As the topic that we want to raise in our speech today is financial complexity, it may be interesting to start off with a few comments regarding what Kirman refers to in the introduction of his well-known book on *Complex Economics* (Routledge, 2011). Kirman begins by describing the recent crisis and the volatility of financial markets as events, which rather than being caused by major exogenous shocks, an outside event that push rational individuals to move to a new equilibrium (as markets are inherently stable), are actually the result of agents’ adjustments to standard procedures, which in turn are introduced in the credit sector (lending to people with low repaying capacities, increasing leverage to an excessive extent, diversifying risks through derivatives). Individuals, banks, financial agents and intermediaries “were not aware that their increasing interdependent positions were generating a threat to the stability of the whole system. The system was organizing itself but this self-organisation ...was not stabilizing” (pg. 5).

What happened is well known: US monetary policy became restrictive, interest rates increased, families struggled to repay their loans, the housing market faced a downturn and the derivatives holdings experienced losses as collateral risky “subprime” loans brought the major banks into budget difficulties and the interbank market stopped functioning. The response of governments and central banks was to intervene by injecting huge amounts of liquidity into the economy, in

order to save insurance companies and the credit system. The impact of the crisis on the real economy has been dramatic and nobody knows how long it will take for it to recover.

All these events, Kirman argues, occurred due to complex economies, characterized by individuals interacting and learning from each other through “contagion, interdependence, networks and trust”, being unable to reach equilibrium. The conclusion reached by Kirman is that we have to learn to live in a dynamic self-organized system that may not be stable and which exposure to dangerous events (recession, deflation), as well as positive events (stability, growth), results from the fact that such system moves from one state of equilibrium to another, as it searches for new opportunities to exploit.

In this paper, the authors intend to examine the complexity of global financial markets from three different perspectives. In section 2, we examine the possibility to extend to financial markets the approach suggested by Kirman. The conclusions we reached is that the complexity of financial markets, even if widely investigated by many scientists, still remains to be fully understood and explained since agents are rationally bounded, decide with limited information on the risks assumed, operate in highly interdependent but not stabilized systems.

In section 3, we focus the analysis by resorting to a metaphor that seem to us well representing the complexity of finance: the football game, where the footballs represent the overall demand and supply of investment products. In this game there are many players: Central Banks and International Financial Institutions as soccer referees (regulators); large banks, financial agents and intermediaries as soccer players and, finally, spectators who make bets and throw billion of balls, as all the other players, in the football field with the aim of profiteering from their investments. All of them are driven by the desire to win, but very few are able to succeed.

In section 4, we discuss an alternative approach to the complexity of finance. Since Central Banks expansionary monetary policies have shown their limits and Governments, due to high debt burdens, have drastically reduced public spending, we argue that a new macroeconomic policy, based on different incentives and risk mitigation measures, is needed to fight the economic and financial crisis and to channel long-term investments towards viable investment projects.

The complexity of finance can be reduced if institutional and private agents become more attracted to source of revenues originated by long-term finance. The investment in infrastructures, in energy generation or distribution projects, in public services, in SMEs innovation plans meet this aim and are the best key drivers to support national and global economic recovery.

## **2. The complexity of finance**

Financial markets are considered to be dynamic “complex models” because of the presence of a high number of agents, which interact with and influence each other, and often operate with limited information as to the risks associated with their decisions, generating huge amounts of transactions and data. The traditional finance theory, based on the assumptions of perfect information, absence of transaction costs and rational agents, does not fit with the reality of financial markets where information is costly, asymmetric, and the participants respond with bounded rationality (Wieland, 2015).

The complexity of finance has dramatically increased over the past two decades due to financial deregulation, privatization, the diffusion of opaque financial products and advanced communication technologies. Such factors together with the growing extensiveness and velocity of worldwide financial interconnectedness have made the financial system more vulnerable and exposed to systemic turbulences. While some agents (banks, insurance companies, hedge fund firms) may argue that the proliferation of new financial products, mortgage-backed securities (MBS), asset-backed-securities (ABS), collateralized mortgage obligations (CMO), collateralized debt obligations (CDO), have allowed for resources to be directed to the most efficient uses and

for savings to be managed at lower risks, making the financial system more resilient, the dramatic increase in the size and complexity of financial products over the past 20 years has produced shocks and changes that have transformed the role of finance in the global economy.

Let me give you some examples of the scale reached by these products.

The total value of foreign exchange dealings in relation to the value of international trading of goods and services is approximately one to one hundred; for \$ 1 of merchandise sold or bought daily on the market, \$ 100 worth of financial transactions can be carried out; the amount of derivatives contracts reached \$ 700 trillion in 2015, nearly three times the value of all the assets in the world (BIS, 2016); computer technologies, through ultra-fast fiber-optic connections, makes high-frequency trading (HFT) possible, which is based on sophisticated algorithms and allows for thousands of orders to be executed in milliseconds in and out of short term positions. Approximately 50% of US equity trading volume is implemented through HFT.

Do these transactions, which generate enormous volumes of liquidity and can be multiplied at great speed through high frequency trading, benefit the end-users, mainly households, non-financial operators and firms, who, as we know, vary in their time constraints and preferences or are financial market participants the ones benefitting from them?

To answer this question, it is important to remember what the main functions of a modern financial system are supposed to be: to assure the well-functioning of payment systems; to help individuals and business operators find the most efficient way of allocating their resources (matching lenders with borrowers); to allow for an efficient management of personal finance (across time and generations); to reduce risks associated with their trading activities (Kay, 2016).

If we look at the evolution of financial markets in recent years, the failure to foresee the crisis and even to understand how the system was evolving over time, as evidenced by the failure of Lehman Brothers in the US and the failure of other banks across Europe, we may conclude that the complexity of finance has made it impossible to make predictions and to identify where the risks stand (Buchanan 2013). In practice, it would seem that none of the assumptions underlying modern finance seems to apply to the reality of financial transactions.

A second question we may raise is the following: is it possible to reduce the complexity of financial products and are there methodologies that financial experts and analysts can agree upon to use to achieve these aims? We know that finance has attracted the attention of many scholars from a variety of different disciplines and backgrounds: economists, physicists, mathematicians, statisticians, traders, lawyers, financial analysts and risk managers have all written about finance, using different terminologies, which has made it difficult for them to communicate and agree with each other.

The answer to this question is therefore that it is not possible to reduce the complexity of finance for a number of reasons: as already mentioned, the complexity of finance derives from the use of technology, innovation, interconnectedness, data process information and also from other causes, which are not analyzed in this presentation, such as market fragmentation, market imperfections, international and government regulations. Each of these elements is associated with and governed by a "system of component systems", consisting of different exchange operations, institutions and specialized people such as clearing houses, brokers, regulators, surveillance authorities, traders, who intervene and interact with each other in their daily activities through advanced communication networks. Following Freedman's view (2014), we can argue that studying the properties that characterize each (socio-technical) system may help, through the building of an interdisciplinary language, to mitigate the complexity of the financial system.

We doubt that this way of proceeding can simplify the comprehension of a system based, at least for many asset markets, on automatic selling and buying procedures, unpredictable trends and where agents (banks, firms, investors) continuously adjust to situations that keep changing.

Spending time doing research, aimed at analyzing the differences and common properties between the system of systems may allow for such changes, which may either be intentionally designed or may have spontaneously emerged from the adaptive mechanisms originated by the evolution of financial markets, to be better understood. The steps that Freedman suggest should be made to gradually gain a better understanding of the complexity of financial systems are not however sufficient to reduce the pace at which phases of calm are replaced by phases of financial turbulence, nor can such steps reduce the size, intensity, speed of trades, volatility (of exchange rates, interest rate futures, stock indexes). This cannot be done unless we modify the way in which we approach finance, as we will do in section 4.

Another reason that may explain why it has not been possible to reduce the complexity of finance is that scholars, practitioners, behavioral scientists, econometricians have attempted to explain financial market anomalies by introducing into their models the hypotheses of individual irrationality, and looking at the effect of this behavior in terms of asset prices deviation from the fundamental (DeBond et al. 2008). Other approaches, based on more sophisticated computational methods of financial risk management, have been proposed to capture the ways in which individual investors and financial managers behave, think and decide when trading but the quantitative results achieved so far are still removed from reality (Carli et al. 2013; Sorropago 2014).

The conclusion we can draw is therefore that the approaches that have been followed until now to explain the complexity of financial markets have raised more questions than it has answered. What we have learned from the literature (Freedman, Kirman, Kay) is that the financial system has evolved and organized trades in ways that made it highly interdependent and unstable. Therefore, the financial systems, which are mainly made up of irrational individuals with limited access to information, who interact with each other and strongly influence each other's decisions, tend to rapidly move from one state to another, thereby increasing levels of uncertainty and making it very difficult to predict or anticipate the future evolution of asset classes' prices. Those who work in the financial market have to take decisions very rapidly to minimize the risks of price volatility and electronic trading has to provide them with unlimited power to buy and sell thousands of assets in milliseconds. Has this increase in speed improved the efficiency of capital markets? Has it made the financial system safer from *endogenous* or *exogenous* shocks?

A second consequence derives from the fact that investors and other financial market participants rapidly react to the innovations introduced into the systems. This capacity to react rapidly to system changes is a valuable skill, provided that institutions improve their ability to manage financial risk, raise and allocate capital required by the market more efficiently, become more resilient and better equipped to absorb shocks. The markets have experienced changes since 2008, which have gone in a variety of different directions. The net revenue of investment banks comes mainly from trading in equities and fixed income assets more than underwriting or issuing new debt; large corporations in need of capital for their investment projects rely very little on investors and financial institutions because decisions as to how much and where to invest are taken internally, by the senior executives of the company who are trained and paid to do this job; instead of transferring risks to those who are better equipped to cope with them, it usually happens that risk ends up being transferred to "those who understood less about it" (Key 2016), as it happened with the securitization of risky assets (subprime mortgages).

An analysis of complex systems may provide us with a fresh perspective from which to study the evolution of financial markets and may allow us to gain a better understanding of how complex the system really is. The increased intermediation of financial products observed in the last two decades, demonstrates that finance has become an activity, which rather than being managed to pursue the interests of its end users, has become an end in itself.

### 3. The Financial football game

The aim of this section is to describe the complexity of finance from a very unusual perspective, not linked to any specific scientific discipline but instead, inspired by the dynamics of a football game.

Whilst football may be considered to be a daring choice for a metaphor, it is actually a very suitable one to describe the financial game, which refers to the economic discipline that studies the processes involved in monetary flows and allocation.

In the financial game, the players, spectators and referees (the regulators) throw the ball (money) at each other, chase each other, play according to the rules (at times) and may also deviate from the rules (exchanging roles with each other).

But why would someone play and not follow Polonius' advice in Shakespeare's Hamlet, when he warns his son against putting "himself in debt and lending money"? Because the financial game is a game of emotions, intimidation and opportunities. A game between personal finance, corporate finance, public finance and international finance, and between actors who exchange values and others who follow a zero-sum logic, actors who think that they can create wealth and others who like to play financial war games or who think that by playing with the word "ethic", they can categorise human behaviour as either good or bad.

Finance is like a ball that rolls over a field, like water that flows, like life and progress.

Would the Italian Renaissance have been possible without the contribution of finance? Without finance, would we have the pleasure of enjoying Venice and its beauty, of discussing issues relating to employment and industrialization, of dreaming about or of hating the new American frontier? Finance is a very interesting, but at the same time a very dangerous game, just like all games that players play.

In football, you have a ball that rolls around quickly and everyone knows what the rules of the game are; the actors include the losers of the game, those who cheat and those who get emotional, those who have to pay the consequences of the emotions of others and those who feed on the emotions of others and also the gamblers who make bets on the outcomes of the game. The game finishes. The championship ends. Only the winners go on to play at the international championship and the ball rolls around once again and only one of the teams wins. As soon as there is a winner, the game becomes a story from the past and the ball rolls around and everything starts again.

The ball (money) can be said to be the soul of the economic system, which operates in a network of interdependent and interconnected relations between economic operators that perform very different activities, quite difficult to define, ranging from business activities to public affairs. It is never quite clear in a time (current) of economic decay, prolonged recession how long the football game is to last, who the players are, who the referee is and why it is that those who end up paying the costs of football games are always those who have no interest nor passion for football.

Let us imagine that there are only three teams playing the financial game, all of which are large groups of cycloptic players looking to throw a titanic ball at each other, which then flows around the field like a Heraclitus river, a river of money.

Let us begin from the referees and side-line referees.

The referees are obviously the Central Banks, those institutions that manage a country's monetary policy (they sew up, pump up and fabricate the football), play and arbitrate the game (they count amongst the main regulators), and which may be independent from the States and citizens.

On the referees' team, there are also International Financial Institutions (WB, IMF, Bank of International Settlements) acting as side-line referees, which promote monetary and financial

cooperation and development, dictate the rules of the game and often teach how to play football to those who do not know how to or are unable to play.

The first team is composed of the most important credit institutions at the international level and Fixed-income investors<sup>1</sup> that provide means of payment and offer financial products, used to intermediate the supply and demand of footballs. Then we have Hedge Funds, which have a strong desire to play football, and play highly regulated games in which the balls must go extremely fast in order to score.

In the team, you also have Sovereign Wealth Funds, which are able to collect balls in foreign currencies using public sector tools, and also big Insurance Companies, which hold stocks of balls as reserves, in case one of the players were to hurt himself. Finally, you have the Dark Pool, a dark and unregulated swimming pool, filled with balls, with many anonymous players collecting, exchanging and negotiating the exchange of balls (money): the gatherers of ninja balls (some experts suggest that already in 2012, one third of Nasdaq transactions were carried out through the Dark Pool).

Then, there is a second team, which designs new balls (new financial tools), listens to clients' requests (the players of the first team), takes into account referees' recommendations (regulators), fabricates new football boots, invents new games, exchanges methods, creates confusion at times, and helps out those who do not have any balls left. They are the creators of creativity. These players tend to have the bad habit of switching jerseys with the first team, exchanging valuable assets with worthless assets, as if rare Ming dynasty vases would be exchanged with ordinary Panini cards. Their balls could easily burst, but this never happens whilst under their feet.

Finally, there is a third team, which is very well known to the other two teams; this team is composed of financial intermediaries, non-bank actors, important financial brokers who pass the balls to each other. They are debtors to those who hold deposits and creditors to those in need of financial help. They are like very fast ball boys; they are very few but they are the ones guaranteeing the other two teams liquidity, turbo liquidity, a river of balls. Whilst not very known to the public, they are important as they make it possible for the other two teams to play. They belong to the few players who always win, provided that the balls do not explode on their feet. In 2014, one of the world's largest brokers, a global intermediary company, was able to intermediate via its platform up to 700 billion dollars a day, as the world was in great need of footballs.

This is a game which plays the lives, expectations and hopes of billions of people; a round-robin tournament within a world championship, which everyone watches but very few understand.

And in a period where unprecedentedly low interest rates persist both, in nominal and real terms, the financial football game is able to continue on. We may say that the "unthinkable is becoming the ordinary", as is claimed in the Bank of International Settlements (BIS) 2015 Annual Report.

The financial football game is however short-run in nature; players manage phases of financial boom and bust through monetary, fiscal and prudential reforms, acting as if the game were to end any second. It is difficult to shift the approach that players have towards the game, from being short-run to long-run oriented.

Whilst the financial boom and bust cycle takes place in the medium and long term, the financial players react in the very short-term.

Policymakers and market operators tend to shorten the timeframe for decision-making, paying no attention to the time required for economic adjustments to be made.

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<sup>1</sup> Fixed-income investments typically pay interest or dividends on a regular schedule and may promise to return your principal at maturity, though that promise is not guaranteed in most cases (The Free Dictionary by Farlex).

#### 4. Is there any alternative?

This gap between the slow timing of the real economy and the very short timeframe provided for decision-making, may explain why there are no longer any winners in the financial football game, except for a few privileged players, and why the game does not satisfy any of the referees. Despite this, no one is trying to introduce a new economic growth model, based on structural reforms to replace the current model, built almost entirely on debts.

“The difficulty lies not so much in developing new ideas as in escaping from old ones”, John Maynard Keynes wrote around seventy years ago. Keynes was a man and an economist who believed with great intensity, in the power of ideas, and who would have laughed if he had been alive today and could see the cycloptic players and referees wearing on the financial football field, the Keynesian, pre-Keynesian, post-Keynesian and anti-Keynesian jerseys.

To understand the game better, it is not enough however to try to reconcile money with social justice, business with rebellion, individualism with equality, as Fernando Pessoa tries to do in the “Anarchist Banker”, but instead we need to remember that the “current temporal dimension is always that of the future”, as claimed by Keynes and confirmed in the introductory chapter of the 2016 BIS Annual Report, “When the future becomes today”.

But what is the future, if not a time in which private and public resources are allocated between productive and fixed-income capital investments? What game can be played if we cannot make any predictions about the future value of our investments?

Since some time now, the question of long-term investments has been raised, as it has become clear that a boost to investments could promote development policies and improve the productive capacity of the economy in a variety of different sectors, including the energy, transport infrastructure, communication, industrial plants, services, technology for renewable energy sectors as well as in education and R&D.

A recent report (McKinsey 2016) estimates that the infrastructure gap in EU member countries and in the US amounts to 800 billion dollars a year and highlights the need to fill such gap.

In a time where interest rates are lower than ever, reflecting the vulnerability of the world economy, a construction site has finally been opened up in Europe and worldwide, where it will be possible to reconcile finance with the real economy and rebuild trust between savers, capital market operators and sovereign states.

Is finance a player in this game?

Only alternative investment funds would say yes to this. They may even go as far as claiming to be the only relevant players in the game, as shown by the success of their investments in Canada and Australia. It is a pity that alternative funds, whilst significant at a financial level, represent only a small share of the market (its global weight is clearly reflected when looking at the distribution of assets between Blackrock and Natixis, which are among the top three fund managers).

But the football game is not played by the cycloptic team of Fixed-income investors who manage trillions of balls and have not developed competencies in the area of hard asset.

The issue of how to finance long-term investments, in order to eliminate the risks of fund shortages in the infrastructure and small and medium enterprises (SME) sectors, therefore lies at the heart of the agenda of policymakers.

The recent financial crisis has forced banks to reduce the share of non-performing assets and has identified three ways of gathering resources for investment: the re-launch of bank credit, the promotion of non-bank finance and a better use of public resources.

For over three years, the G20, Central Banks, OECD have been engaging in moral suasion initiatives, and in an analytical, investigative and managerial work to guide national policymaking,

in particular with respect to European Union economic governance and regulators, and to ensure that a bridge can be created between finance and the real economy.

A global hub has also been created for Long-Term Investors and the role of the State in the economy was strengthened in Europe with new responsibilities being given to the National Promotional Banks (new responsibilities were assigned to KfW in Germany, the Caisse des Dépôts et Consignations in France and the Cassa di Risparmio di Roma in Italy). Moreover, new regulatory authorities were established to supervise the Capital Market and pension funds (ESMA, EIOPA).

Studies focusing on analysing Public-Private partnership models and matrices, all point to the great benefits that were derived from the work carried out by Norton Rose Fullbright for the Global Infrastructure Hub in 2016. In Europe, the European Fund for Strategic Investments (EFSI), an institution that serves as nucleus for Europe's investment plan, was created. There is also an ongoing plan to create a new financial asset class, the European Long Term Investment Fund (ELTIF).

One may be inclined on thinking that the monetary policies currently in action, including the Quantitative Easing programme in Europe, the post Tarp in the US, the Japanese monetary model, the strict Basel III regulations, the Solvency II and IORP II directives, would provide an incentive for the cycloptic football teams to play the financial football game.

But no one is playing the game or if they are, only mini football. Why is this? Maybe the big teams are not doing their homework or perhaps it is the trainers' fault. Could it be that the Top Down is unable to meet the Bottom Up?

The reason is that players from the cycloptic teams are playing using old methods but at the same time, following new rules.

Just recently, Goldman Sachs, one of the most important players, has pointed out to the fact that half of fixed-income bonds are currently being sold at negative interest rates, with nearly 4,100 billion Euros being exchanged at negative rates, amounting to exactly 49% of the total sum of the bond index, independently of whether they are sovereign, covered or corporate bonds.

Looking at the EU iBoxx IG index, we can see that in July 2016, 216 billion Euros of corporate bonds generated negative returns, equal to 14% of the entire index.

A traditional commercial bank who applies a spread to a creditor at a time where negative interest rates prevail, is inclined on facing a reduction in its returns and capitalisation on non-performing loans and will not know which business model to adopt to increase profitability.

Large insurance companies and pension funds that buy debts, sovereign debts in particular, put their performance at risk, and also risk negatively impacting the returns of the persons insured by them. Despite this representing an important risk for their reserves, insurance companies have been unable to change their business model.

The same logic applies to sovereign funds, which are often financed by revenue derived from commodity trading and tend to struggle to adapt their business model to situations in which negative interest rates prevail.

But some players in the financial game continue to exchange value focusing on equity and to search for markets in countries that have been weakened by the monetary policies of the large central banks. Players continue to bundle up derivatives and to launch swaps, as they believe in the power of finance, in the weakness of sovereign states and they are certain that the inevitable will never become the ordinary, prisoners of Say's law, according to which supply creates its own demand of balls.

So why is it that in an era, where sovereign states have accumulated huge debts and stocks of balls are so large, no one is playing the game of long-term investments to pursue financial players' interests, or those of sovereign states or citizens, thereby providing a boost to investments into fixed-income capital?



Whilst the fact that since the recent financial crisis, policy-makers and citizens find it difficult to trust the financial system, represents a real issue, one cannot think that financial operators can be forced by law to pay attention to the real economy, just like it would not be possible to legally oblige entrepreneurs to create jobs.

Is the mistrust between financial football game players and “others” still too strong or is the game still too complex? Or is the leadership of sovereign states too weak, in particular that of OECD member countries?

Putting aside the issue of complexity, money makes money move around; if by exchanging money units, value can be created then everything should run smoothly but if no value is created, the perception of the game becomes blurred and no one wants to play.

Hence, the development model for long-term investments should be oriented towards the generation of funds, financial instruments that should make it possible for institutional and private investors to make long-term investments in listed and non-listed companies and into long-term assets, such as real estate goods and infrastructural projects.

In the path towards financial innovation, investors should receive adequate returns, risks should be accurately estimated and social responsibility should be taken into account. The development of a capital market that reconciles the interests of businesses with those of credit institutions and those of investors, may also take some inspiration from the positive innovative aspects of the Asset-Backed Securities (ABS) experience.

Referring to ABS in a positive way may surprise some people as the misuse of such derivative products in the past, contributed to the recent financial crisis. But can we really claim that books are dangerous because some lunatic decides to throw a book at people from a skyscraper? Can we really make illegal the use of cars because some reckless man ran over bystanders with a car?

At the same time, States should continue to innovate the role of businesses, ensuring that all of its interventions are strategic in nature and have feasible objectives; they should promote the collective interest and replace the old model of economic growth, entirely based on debts, with a system focused on private capital investments, paying particular attention to infrastructure investments.

This innovative game, where finance can play a different role, could allow for the building of a new economic democracy and a social market economy that could eliminate the conflict between capital and employment. Such game could lead to the injection of capital into the companies' lives and could make it possible for employees to contribute to the financing of enterprises through the participation of social security system and insurance companies to the risk capital and management of companies.

Future developments should include the creation of a new asset class, a category that is negotiable, whose value is possible to assess, transparent and easy to use to finance new infrastructure, in particular in the final phases of the investment, a bit less important in the authorisation phase and very important for the management phase of the infrastructure. This asset class is to be incorporated into the life of brownfield infrastructure, where the infrastructure serves as a collateral, which is capable of generating fixed and variable cash flows, following the model of European Long Term Investment Fund.

Ethical rules are needed for such aims to be achieved, and also courage to create a new economic humanism that may finally drive finance towards the right goal. But we also need financial instruments which, rather than simplifying the complexity of finance, could assign to finance a new role in the game of the real economy, keeping always in mind the idea that it is “employment that makes the economy, and not the other way around” (Benini, Sorcioni 2016).

But above all, what is needed is a bit of lucid folly.

Desiderius Erasmus of Rotterdam, in his essay on the Praise of Folly makes folly speak and say that: “And now you shall hear from me a plain extemporaneous speech, but so much the truer. Nor would I have you think it like the rest of orators, made for the ostentation of wit; for these, as you know, when they have been beating their heads some thirty years about an oration and at last perhaps produce somewhat that was never their own, shall yet swear they composed it in three days, and that too for diversion: whereas I ever liked it best to speak whatever came first out.”

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